



NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT

ACTUARIAL VALUATION AS OF JULY 1, 2010

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Actuarial Valuation

- ◆ Prepared as of July 1, 2010, using member data, financial data, benefit and contribution provisions, actuarial assumptions and methods
- ◆ Purposes:
 - ▶ Measure the actuarial liabilities
 - ▶ Determine adequacy of current statutory contributions
 - ▶ Provide other information for reporting
 - GASB #25
 - Financial Report (CAFR)
 - ▶ Explain changes in actuarial condition of TFFR
 - ▶ Track changes over time
 - ▶ Warn about possible future problems and issues

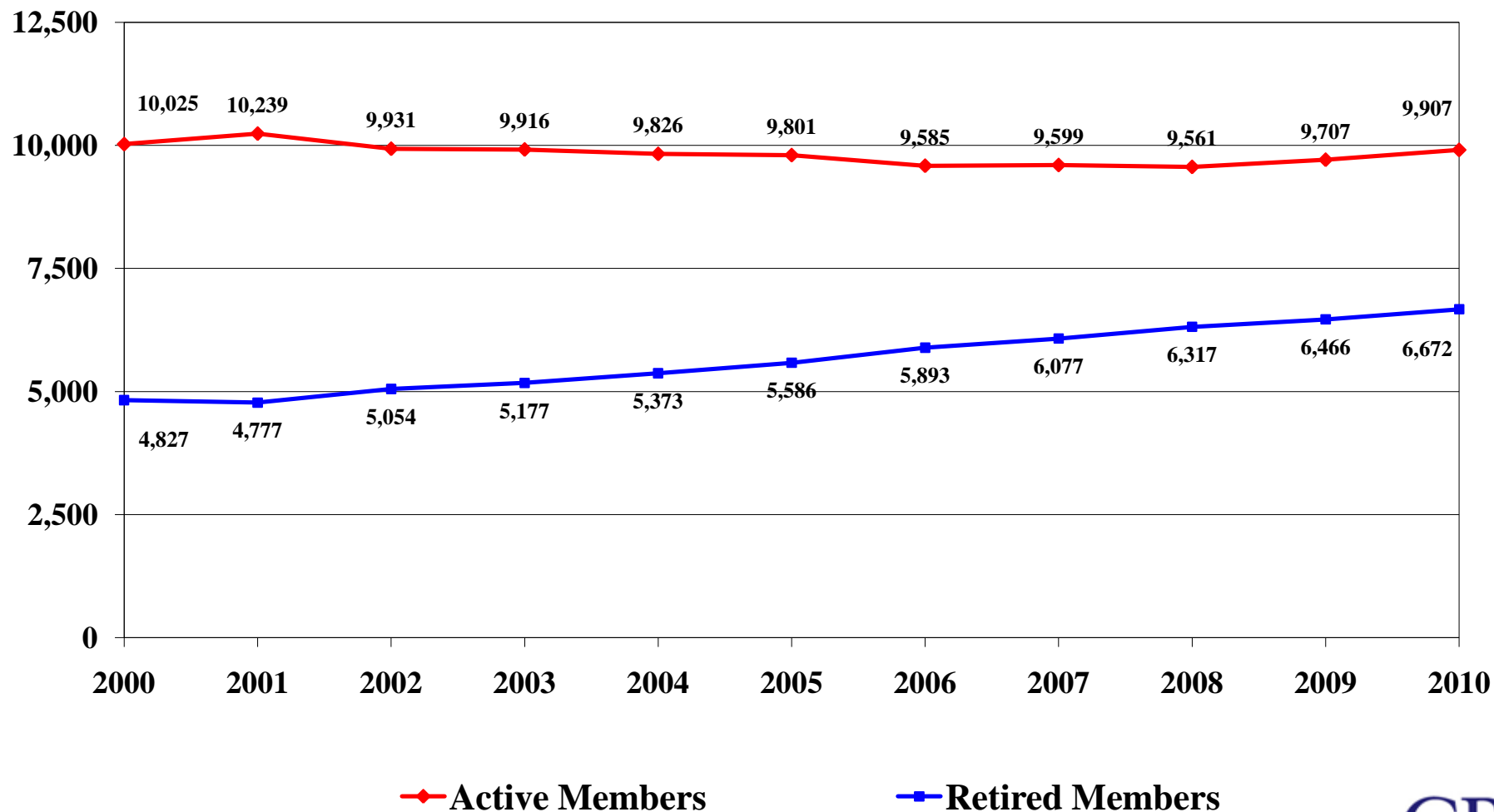


Actuarial Valuation

- There were no changes to the benefit provisions since the prior year valuation
 - ▶ Employer contrib. rate increased to 8.75% from 8.25%
 - ▶ Special payment to retirees of \$4.4 million in Dec. 2009
- The actuarial assumptions were updated to incorporate the results of the experience study adopted by the Board on January 21, 2010
 - ▶ Improvement to mortality (increased life expectancy)
 - ▶ Decrease in the retirement rates
 - ▶ Slight increase in the compensation assumption
 - ▶ Investment return assumption continues to be 8.00%

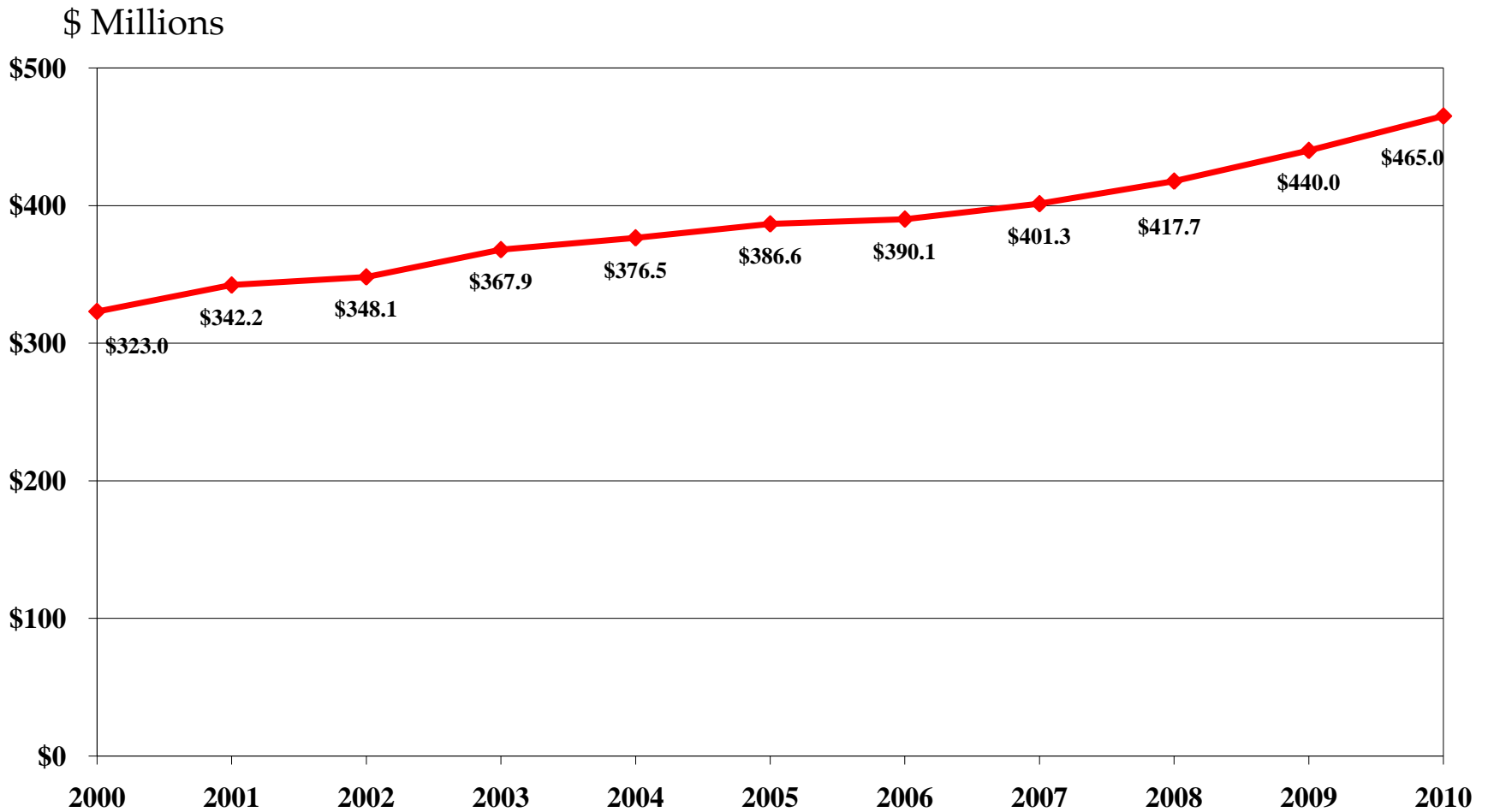


Active Members and Retired Members



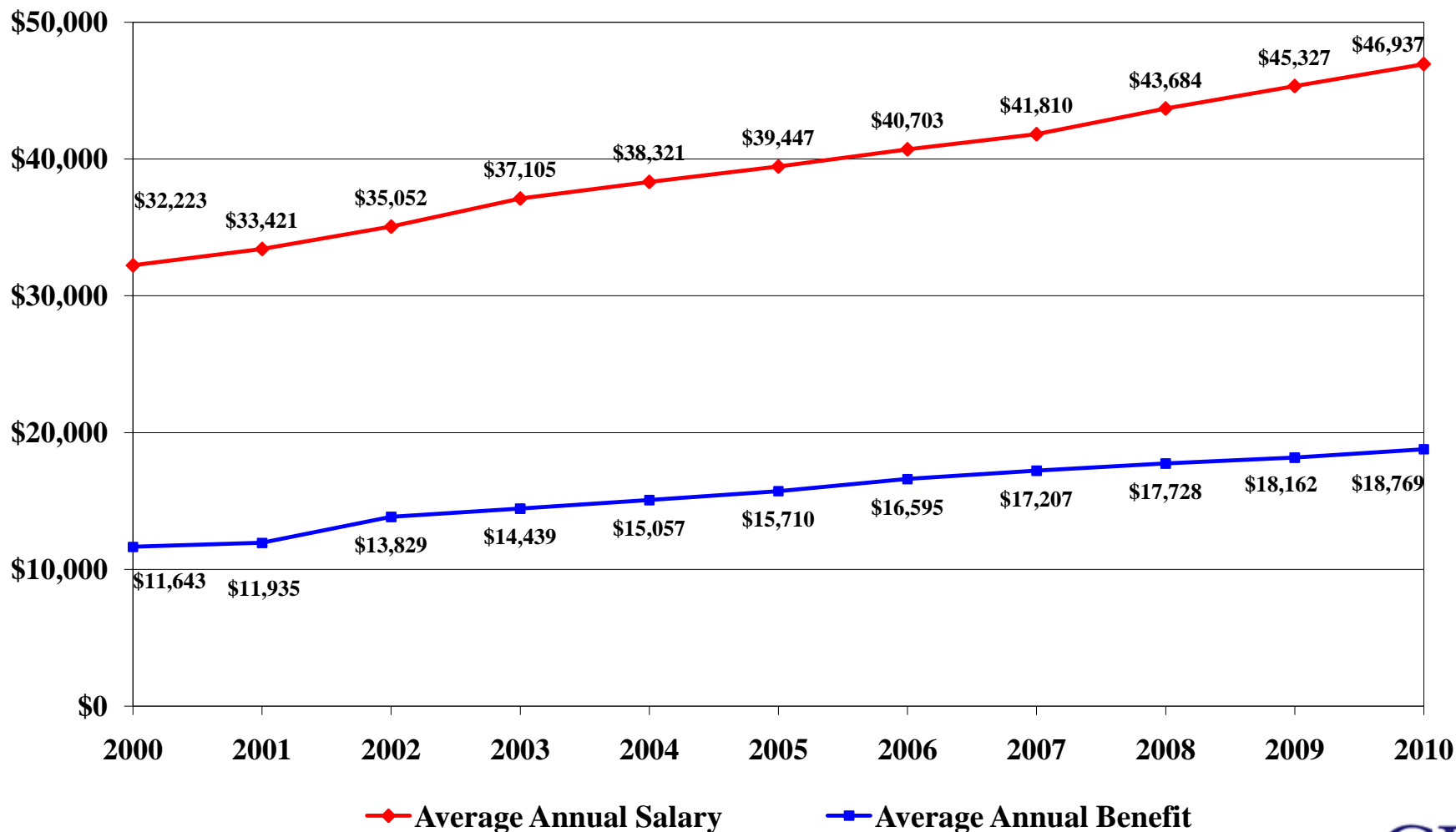


Active Payroll





Average Salary and Average Benefit





Membership – Actives and Inactives

- ◆ The number of active members increased by 200 from 9,707 to 9,907
 - ▶ 2.1% increase
 - ▶ Over last 10 years, active membership has decreased an average of 0.1% per year
- ◆ Payroll for active members increased 5.7%, from \$440.0 million to \$465.0 million
 - ▶ Payroll has increased an average of 3.7% per year over the last ten years



Membership – Actives and Inactives

- ◆ Average pay for active members increased 3.6%, from \$ 45,327 to \$46,937
- ◆ However, increase in average salary can be misleading
 - ▶ Higher paid teachers who retire are replaced by new teachers
 - ▶ Growth in number of teachers pulls average down
 - ▶ 6.5% average increase for continuing members
 - FY 2010 over FY 2009
 - Was a 5.8% increase last year



Membership – Actives and Inactives

- ◆ Average age of active members is 44.2, compared to 44.5 last year and to 43.9 ten years ago
- ◆ Average years of service for active members is 14.0, compared to 14.3 last year and to 14.1 ten years ago
- ◆ Average age and service peaked at 44.9 and 14.7 in 2004, 2005
- ◆ There are also 1,472 inactive, vested members, and there are 331 inactive nonvested members



Membership – Annuitants

- ◆ The number of annuitants increased by 206, from 6,466 to 6,672, a 3.2% increase
 - ▶ Annuitants include service retirees, disabled retirees, and beneficiaries receiving benefits
 - ▶ Over the last 10 years, the increase in the number of annuitants was 3.3% per year
- ◆ Average annual benefit: \$18,769 (\$1,564/month)
- ◆ 1.5 active members for each annuitant
 - ▶ Ratio is decreasing, was 2.1 ten years ago



Assets

- ◆ Fair market value increased from \$1,310 million (June 30, 2009) to \$1,438 million (June 30, 2010), or \$128 million
- ◆ Return on market of 13.9% in FY 2010
 - ▶ Net of investment and administrative expenses
 - ▶ It was -27.0% in FY 2009, and -7.0% in FY 2008
- ◆ Average returns:
 - ▶ Last 10 years: 2.2%
 - ▶ Last 20 years: 6.9%



Assets

- ◆ Last 10 years
 - ▶ 5 out of last 10 years returns were greater than 8.00% (all greater than 13%)
 - ▶ 5 out of last 10 years returns were less than 8.00% (all less than 3%, four of these negative)
- ◆ Fund assumes assets will earn 8.00%
 - ▶ So the investment gain is really 5.9% (13.9% - 8.0%)
- ◆ In dollar terms, surplus of \$74 million
 - ▶ Difference between actual return--\$177 million (13.9%) and expected return--\$103 million (8.0%)



Assets

- All actuarial calculations are based on actuarial value of assets, not market value
- Actuarial value reflects 20% of the difference between last year's expected return on market and the actual return
 - ▶ 40% of FY 2009 difference, 60% of FY 2008 difference and 80% of FY 2007 difference
- Actuarial value is now \$1,842 million, vs. \$ 1,900 million last year
 - ▶ Decrease due to recognition of another 20% of FY 2009 loss

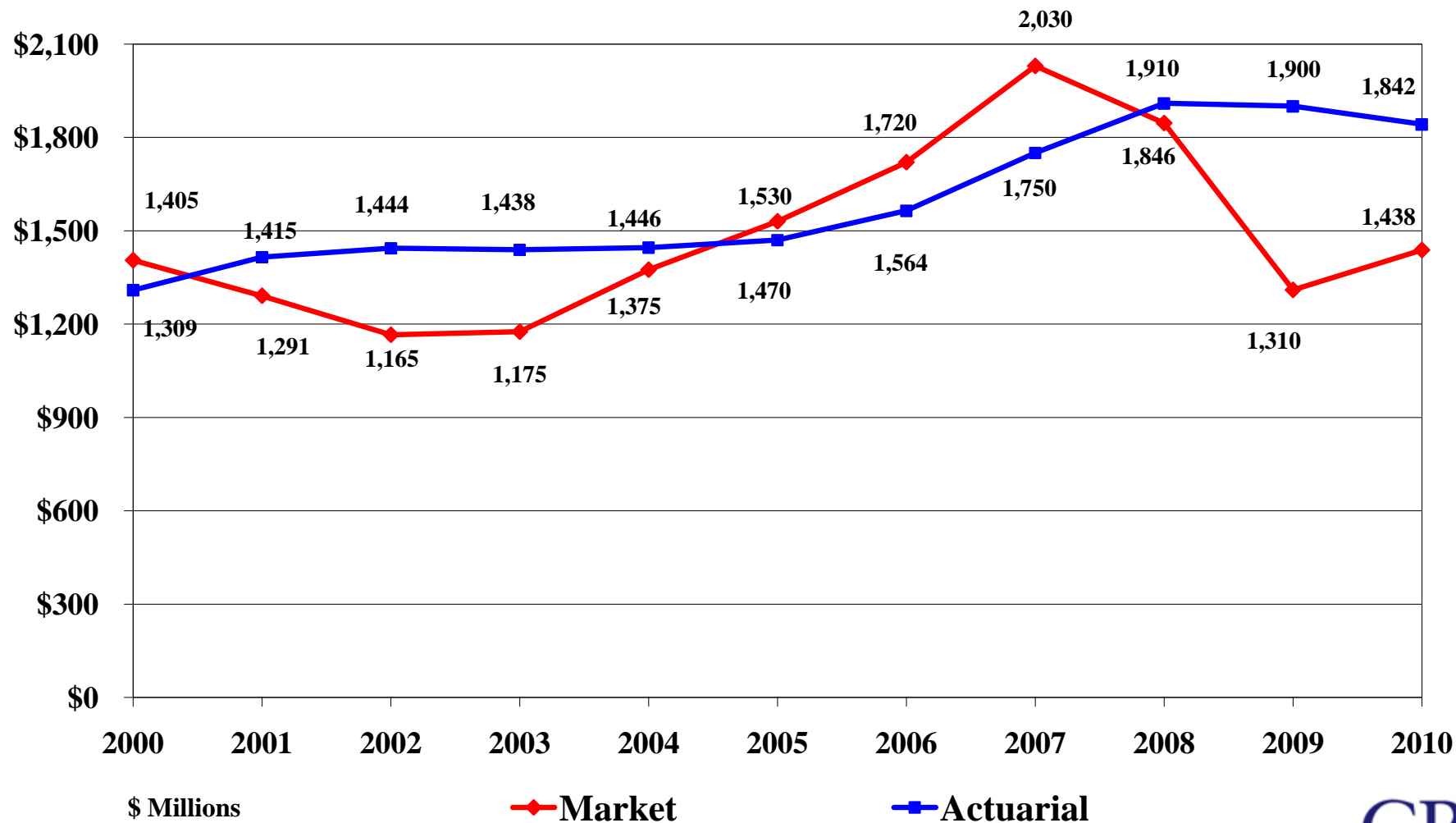


Assets

- ◆ Actuarial return was -0.5% for FY 2010, compared to 13.9% on market value basis
- ◆ Actuarial value is 128% of fair market value
 - ▶ Was 145% last year
- ◆ \$404.0 million in deferred losses, have not yet been recognized

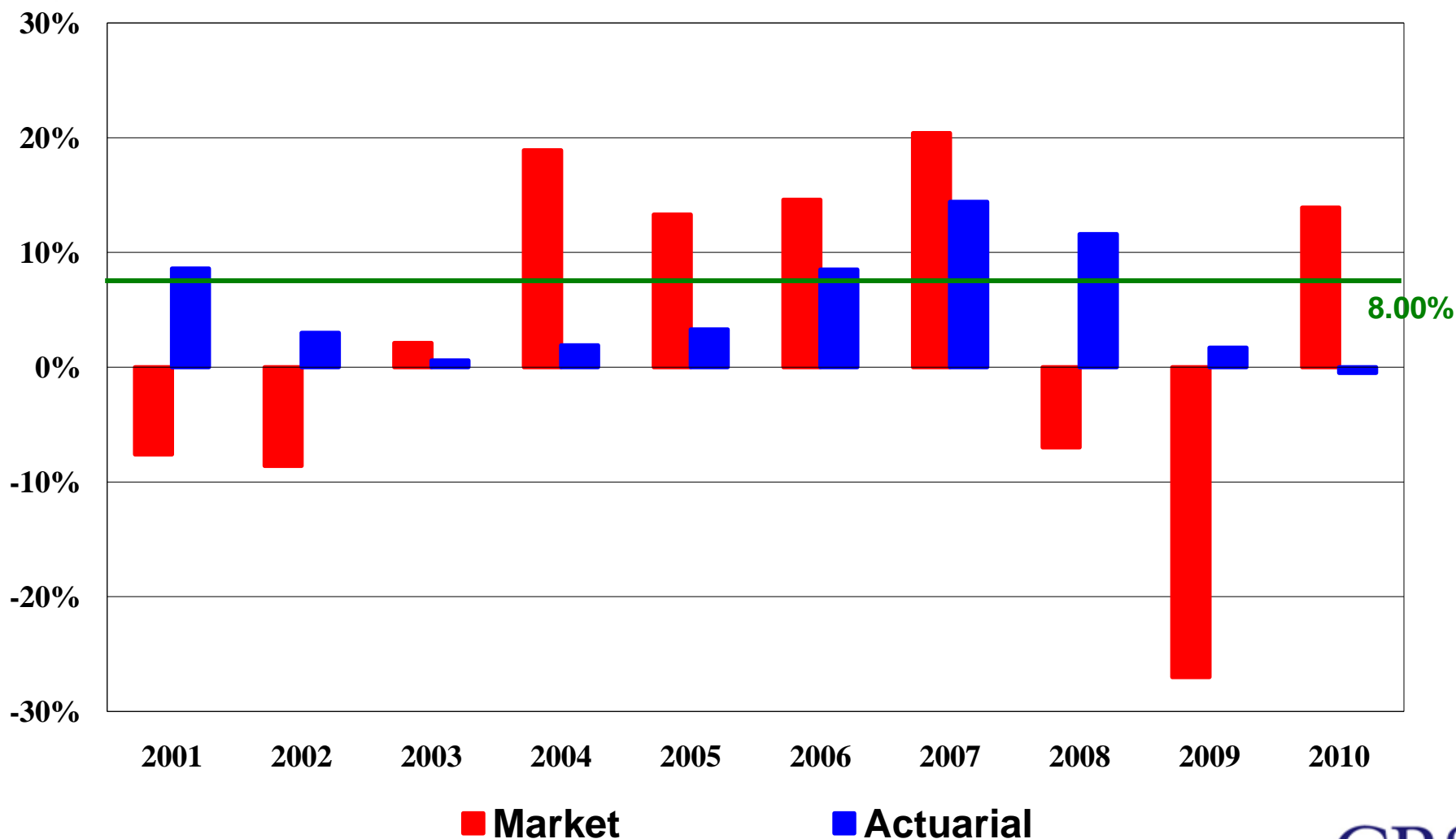


Market and Actuarial Values of Assets



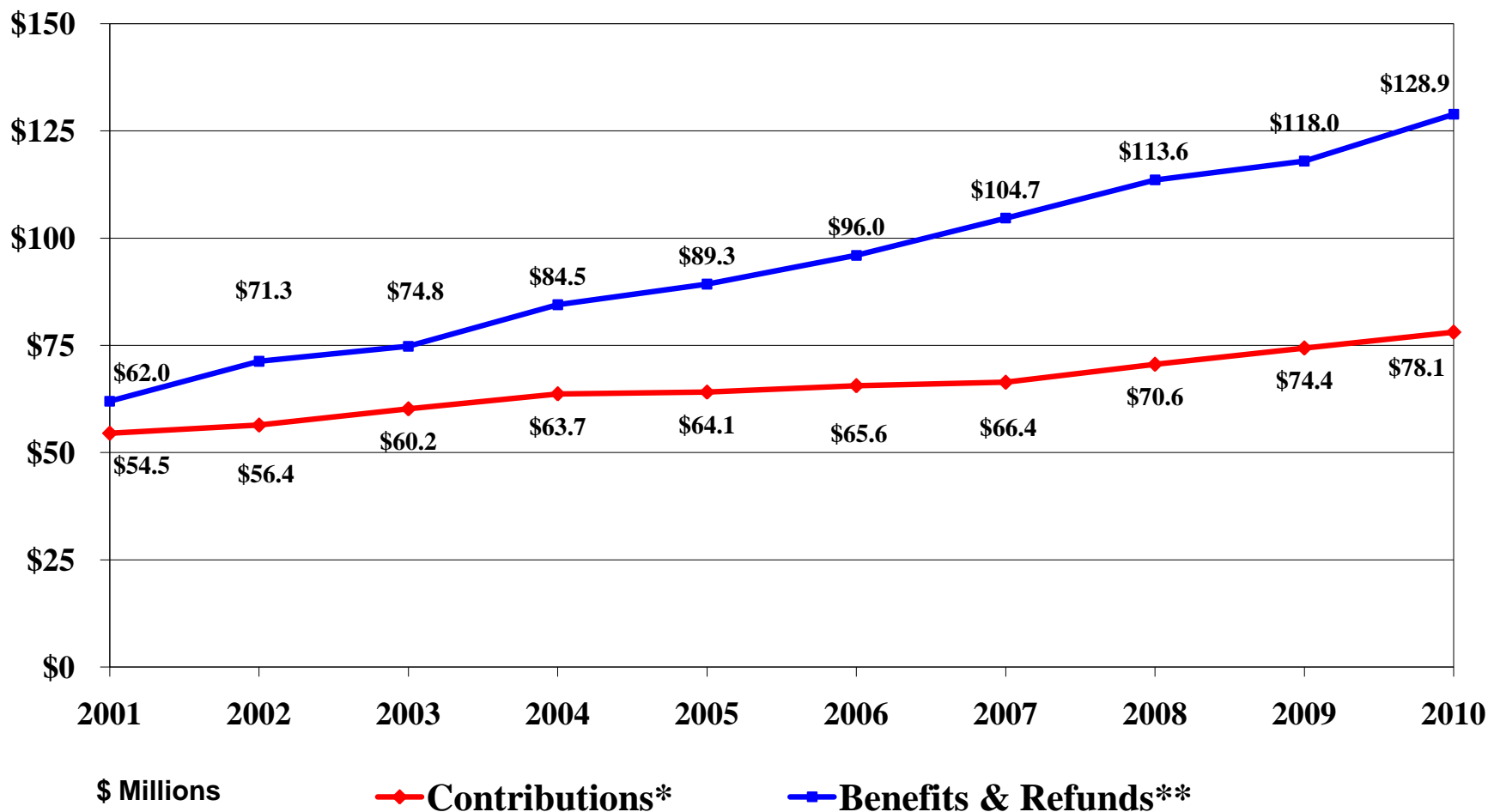


Returns on Actuarial and Market Value of Assets





Contributions vs. Benefits and Refunds

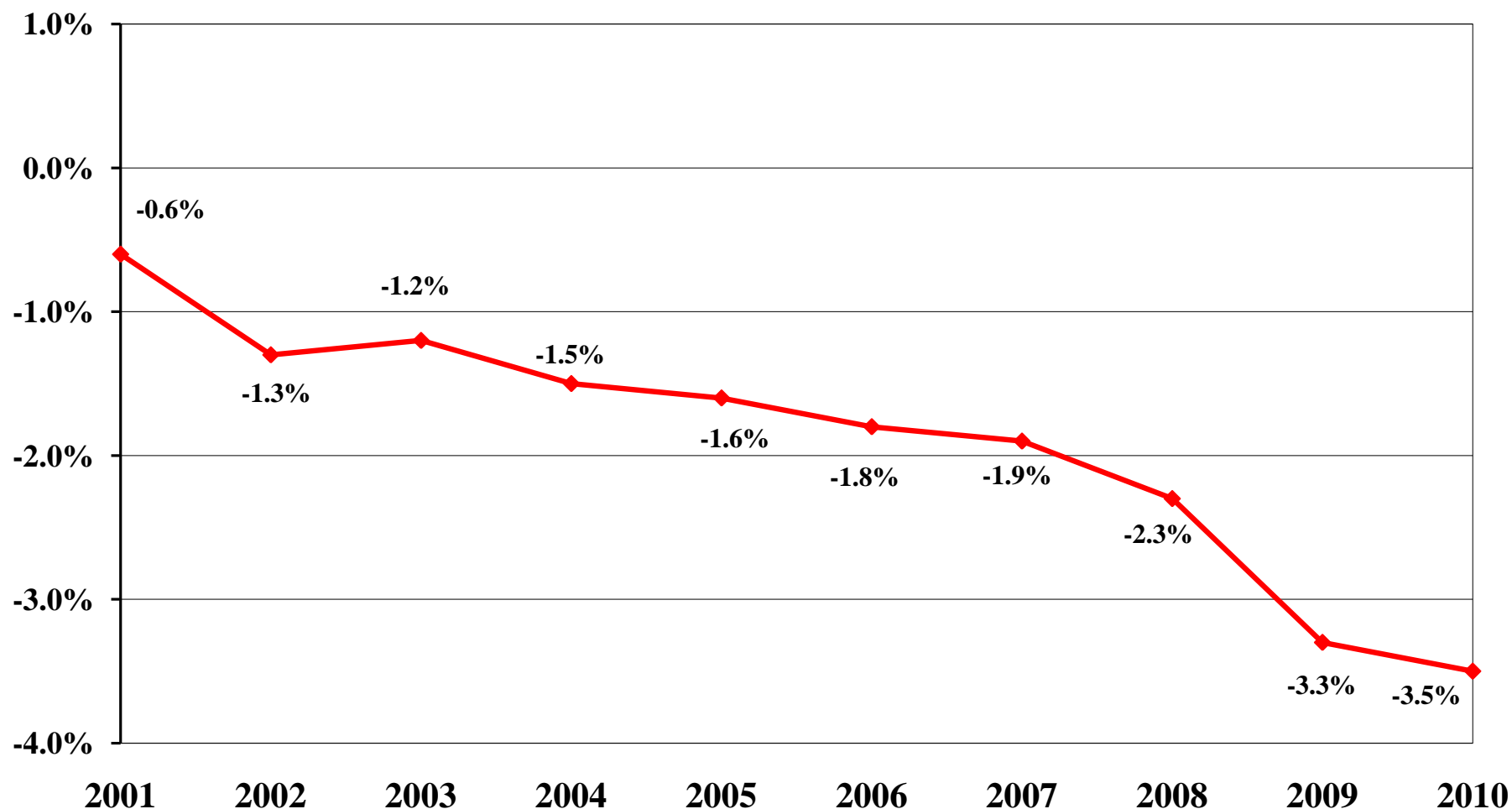


* Includes member and employer contributions, and service purchases

** Includes administrative expenses. Includes \$4.4 million special payment in FY 2010

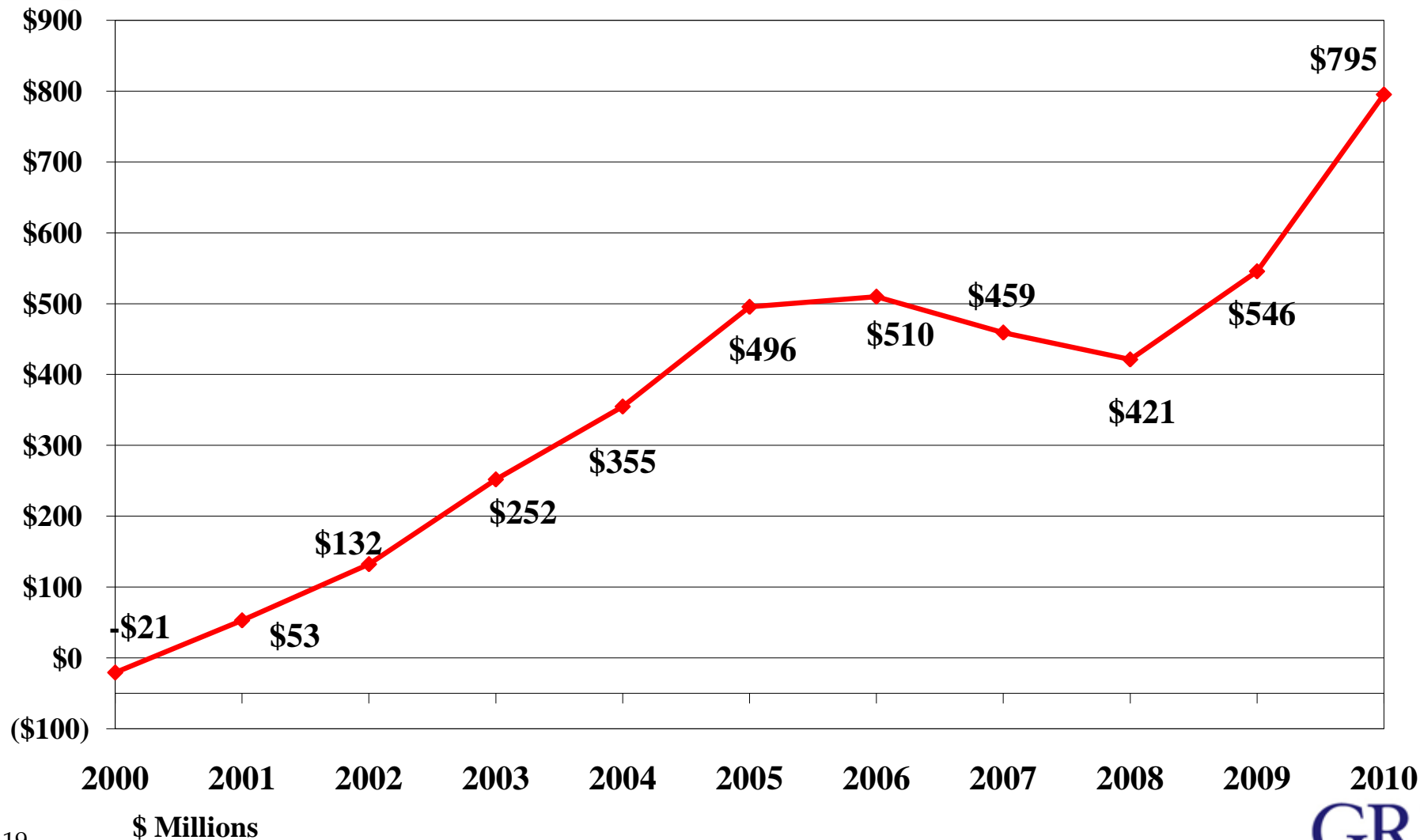


External Cash Flow As Percentage of Market Value





UAAL



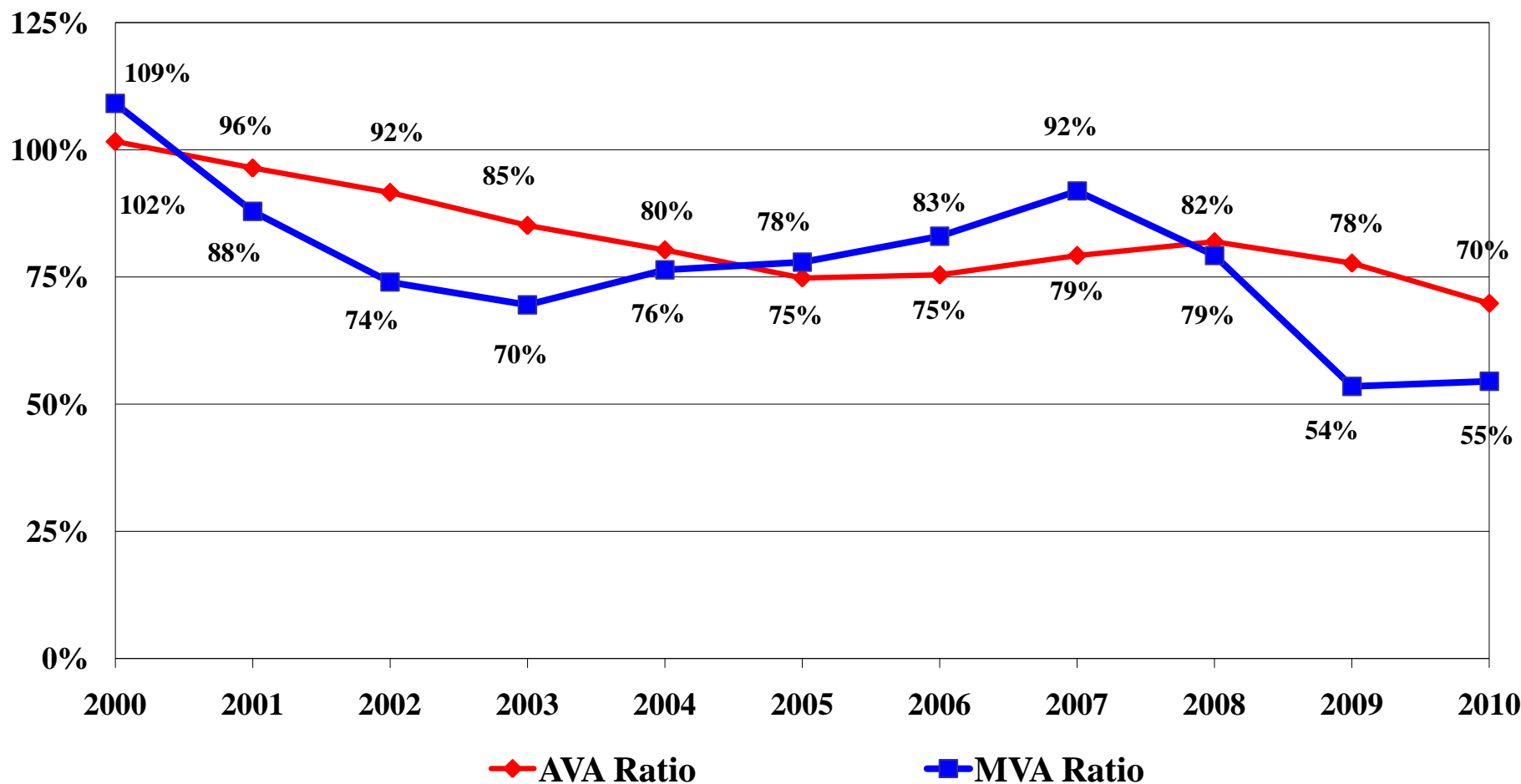


Change in UAAL for the Year (In \$ Millions)

	FY 2010	FY 2009
1. UAAL at beginning of year	\$545.6	\$421.2
2. Amortization payments	12.1	3.5
3. Asset experience	159.5	118.3
4. Liability experience	6.1	(1.8)
5. Assumption and method changes	71.9	--
6. Legislative changes	--	4.4
7. UAAL at end of year	\$795.2	\$545.6



Funded Ratios (Assets Actuarial Accrued Liabilities)




Benefit increases reflected in 2001

Assumption changes reflected in 2005 and 2010

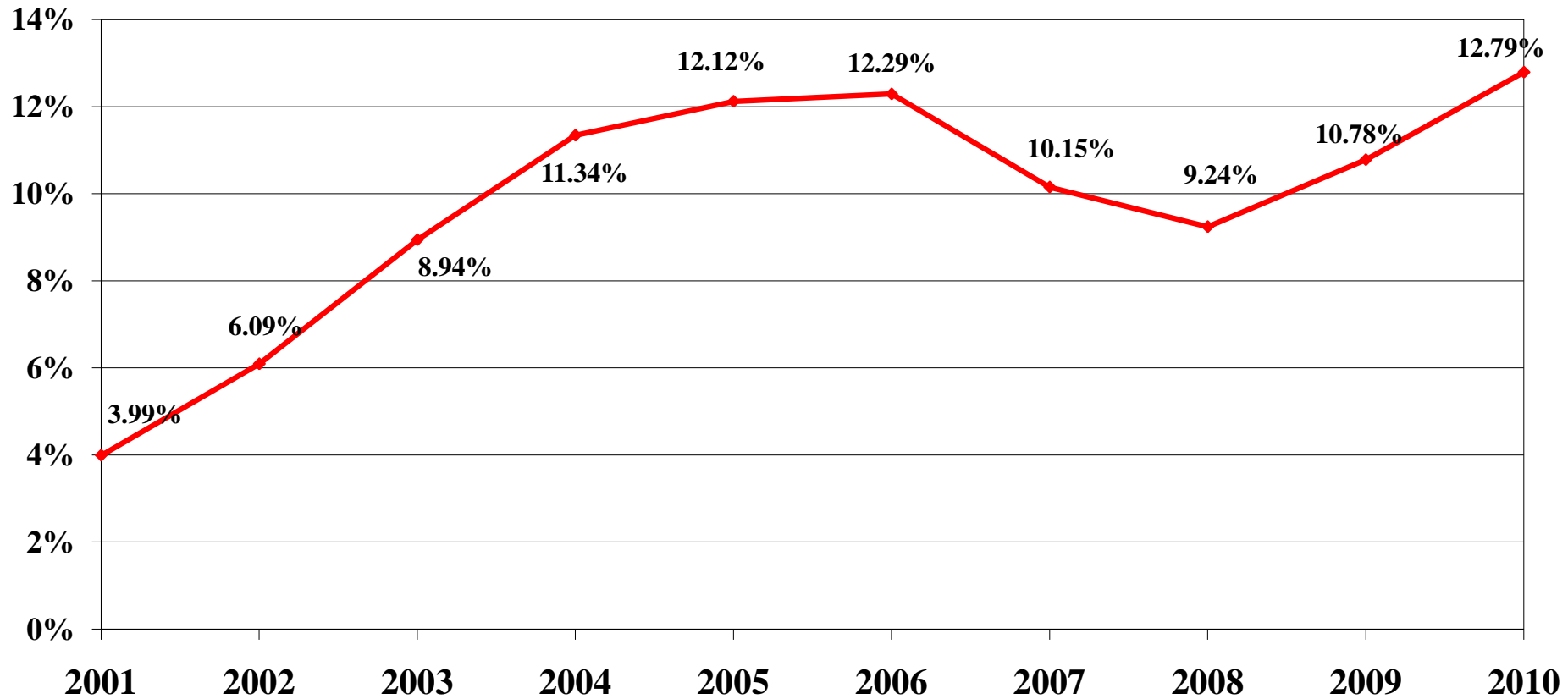


Actuarial Results

- ◆ Unfunded actuarial accrued liability (UAAL) increased from \$ 545.6 million to \$795.2 million
- ◆ Funded ratio decreased from 77.7% to 69.8%
 - ▶ Actuarial assets divided by actuarial accrued liability
 - ▶ Mainly due to recognition of additional 20% of FY 2009 asset loss
 - ▶ Funded ratio using market value is 54.5%, up from 53.5% last year
- ◆ UAAL is 171.0% of covered payroll, compared to 124.0% last year



GASB 25 Annual Required Contribution (ARC)



Calculation of ARC now based on 30-year level-percentage-of-payroll amortization of UAAL; before 2005, ARC reflected 20-year level-dollar amortization of UAAL



Actuarial Results

- ◆ Negative margin (shortfall) declined from -2.53% to -4.04%
 - ▶ 8.75% statutory – 12.79% GASB ARC (benchmark)
- ◆ 8.75% statutory rate composed of:
 - ▶ 2.82% employer normal cost
 - ▶ 5.93% paid toward funding of UAAL
- ◆ Funding period based on 8.75% employer rate is infinite
 - ▶ 5.93% amortization payment insufficient



Actuarial Results

- ◆ Contribution for FY 2010 was 76.5% of GASB Annual Required Contribution (ARC)
 - ▶ 8.25% 10.78%
- ◆ Contribution for FY 2011 will be 68.4% of ARC
 - ▶ 8.75% 12.79%
- ◆ These are reported in TFFR's CAFR (Comprehensive Annual Financial Report)



Projections - Assumptions

- ◆ Scenarios based on 7 possible investment returns for FY 2011: from -24% to +24%
- ◆ 8.00% annual return for FY 2012 and later
- ◆ No liability gains or losses
- ◆ Assumes a constant active workforce (0.0% growth in the number of employees)
- ◆ 8.75% employer contribution rate effective in FY 2011 and after
- ◆ No other benefit or contribution changes

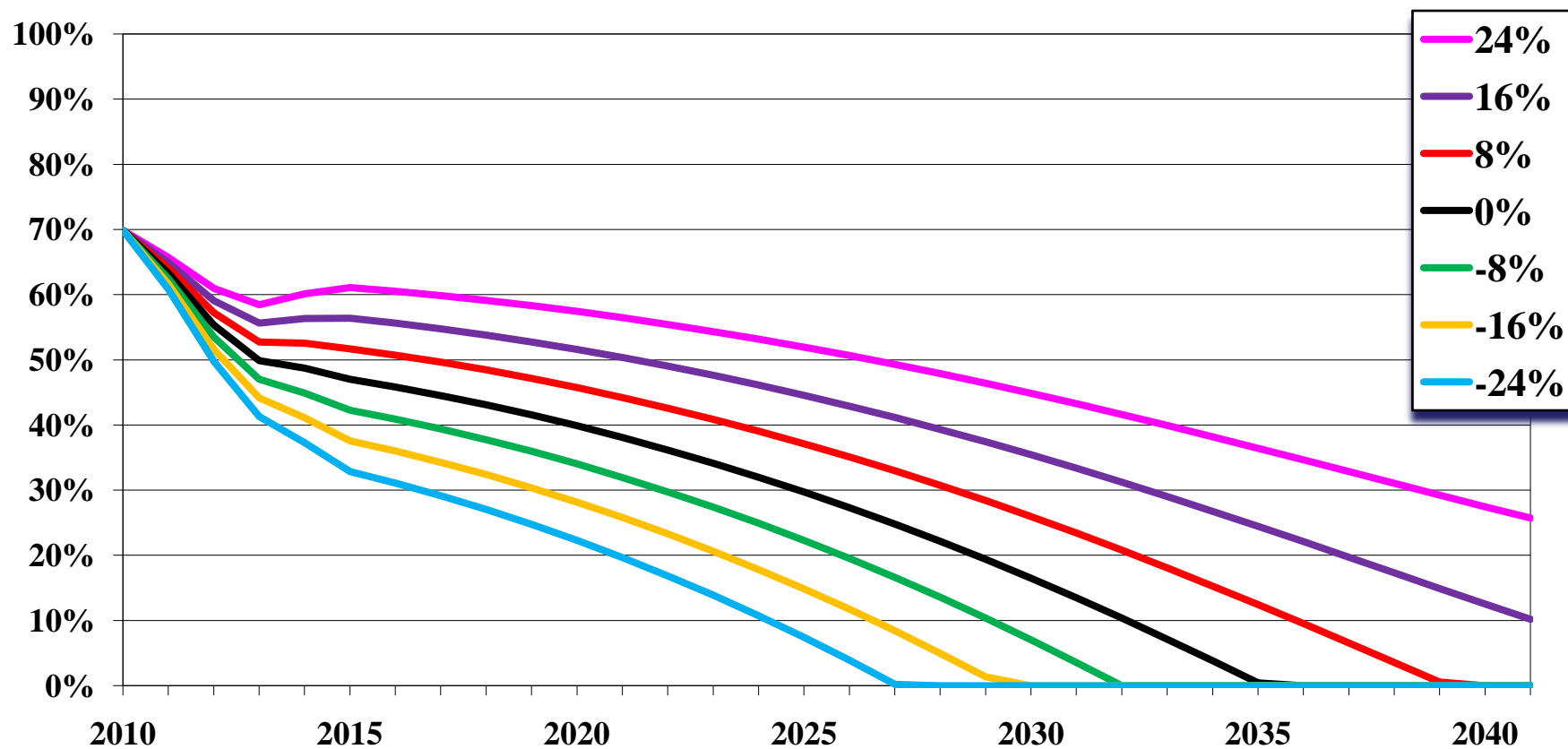


Projection Results

- ◆ TFFR would run out of money within 30 years
- ◆ 8.75% employer contribution rate never sunsets
- ◆ Margin never becomes positive
- ◆ UAAL continues to grow in the future
- ◆ Funded ratios under all scenarios trend to 0%



Projected Funded Ratios – Actuarial (AVA) Basis



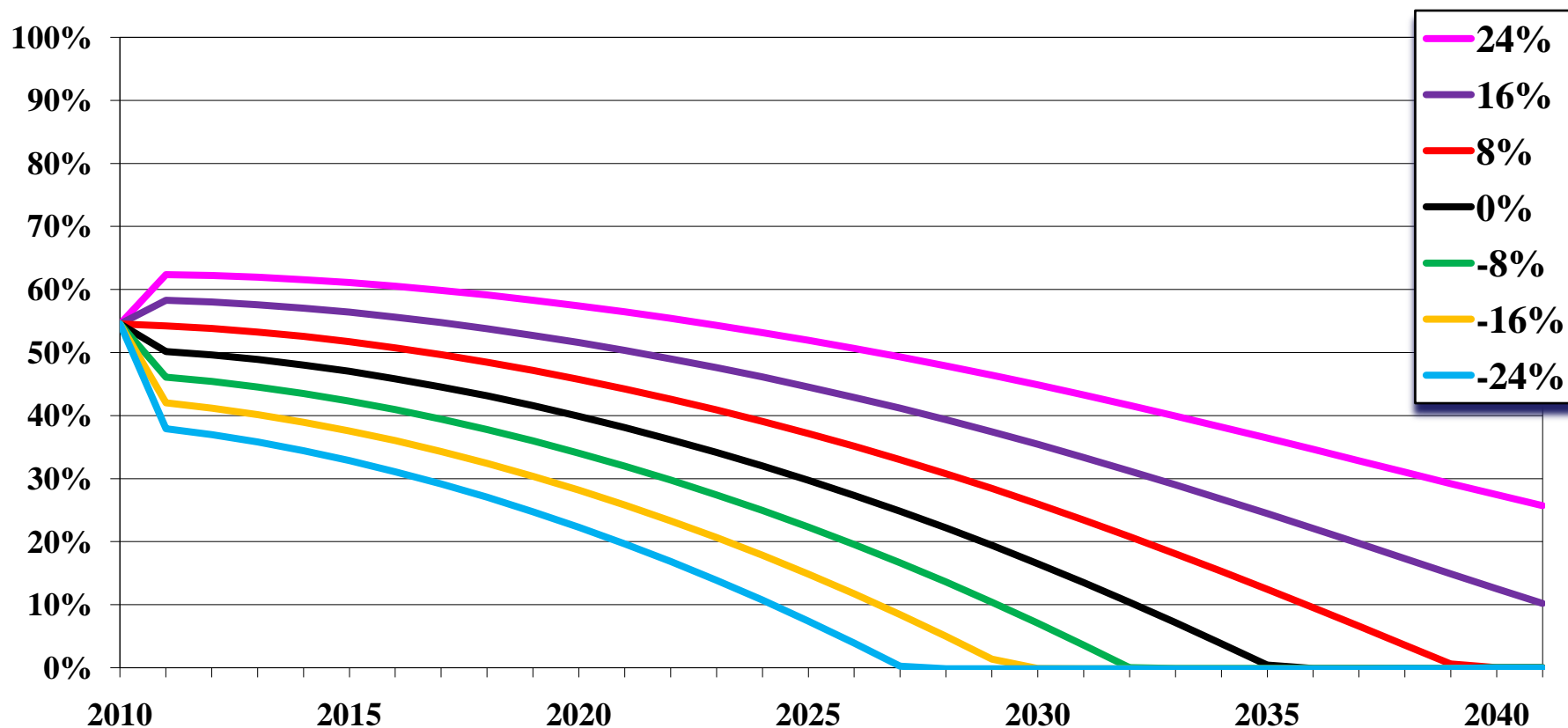


Projected Funded Ratios – Actuarial (AVA) Basis

Valuation Year	24.00% for FY2011	16.00% for FY2011	8.00% for FY2011	0.00% for FY2011	-8.00% for FY2011	-16.00% for FY2011	-24.00% for FY2011
2010	70%	70%	70%	70%	70%	70%	70%
2011	66%	65%	64%	63%	62%	62%	61%
2012	61%	59%	57%	55%	53%	52%	50%
2013	58%	56%	53%	50%	47%	44%	41%
2014	60%	56%	53%	49%	45%	41%	37%
2015	61%	56%	52%	47%	42%	38%	33%
2020	57%	52%	46%	40%	34%	28%	22%
2025	52%	45%	37%	30%	22%	15%	7%
2030	45%	35%	26%	17%	7%	0%	0%
2035	36%	24%	12%	0%	0%	0%	0%
2040	27%	13%	0%	0%	0%	0%	0%



Projected Funded Ratios – Market (MVA) Basis





Projected Funded Ratios – Market (MVA) Basis

Valuation Year	24.00% for FY2011	16.00% for FY2011	8.00% for FY2011	0.00% for FY2011	-8.00% for FY2011	-16.00% for FY2011	-24.00% for FY2011
2010	55%	55%	55%	55%	55%	55%	55%
2011	62%	58%	54%	50%	46%	42%	38%
2012	62%	58%	54%	50%	45%	41%	37%
2013	62%	58%	53%	49%	45%	40%	36%
2014	62%	57%	53%	48%	43%	39%	34%
2015	61%	56%	52%	47%	42%	38%	33%
2020	57%	52%	46%	40%	34%	28%	22%
2025	52%	45%	37%	30%	22%	15%	7%
2030	45%	35%	26%	17%	7%	0%	0%
2035	36%	24%	12%	0%	0%	0%	0%
2040	27%	13%	0%	0%	0%	0%	0%



Projected Margin

Valuation Year	24.00% for FY2011	16.00% for FY2011	8.00% for FY2011	0.00% for FY2011	-8.00% for FY2011	-16.00% for FY2011	-24.00% for FY2011
2010	-4.04%	-4.04%	-4.04%	-4.04%	-4.04%	-4.04%	-4.04%
2011	-5.66%	-5.93%	-6.21%	-6.48%	-6.76%	-7.03%	-7.31%
2012	-7.50%	-8.14%	-8.78%	-9.43%	-10.07%	-10.72%	-11.36%
2013	-8.55%	-9.55%	-10.55%	-11.55%	-12.55%	-13.55%	-14.55%
2014	-8.11%	-9.45%	-10.79%	-12.13%	-13.48%	-14.82%	-16.17%
2015	-7.88%	-9.55%	-11.21%	-12.98%	-14.56%	-16.23%	-17.91%
2020	-9.22%	-11.30%	-13.38%	-15.46%	-17.54%	-19.63%	-21.72%
2025	-10.64%	-13.19%	-15.75%	-18.31%	-20.87%	-23.44%	-26.00%
2030	-12.30%	-15.42%	-18.54%	-21.67%	-24.80%	-27.13%	-27.13%
2035	-14.15%	-17.94%	-21.73%	-25.52%	-25.65%	-25.65%	-25.65%
2040	-16.24%	-20.80%	-24.62%	-24.62%	-24.62%	-24.62%	-24.62%



Projected Return Required Each Year after FY 2011 to Achieve Given AVA Funded Ratio in 30 Years (FY2041)

Return Assumed for FY 2011	24.00%	16.00%	8.00%	0.00%	-8.00%	-16.00%	-24.00%
Target Funded Ratio	Post-FY 2011 Return Required						
70%	9.19%	9.68%	10.23%	10.85%	11.55%	12.36%	13.31%
80%	9.40%	9.89%	10.44%	11.05%	11.74%	12.54%	13.48%
90%	9.60%	10.09%	10.63%	11.23%	11.92%	12.71%	13.64%
100%	9.80%	10.28%	10.81%	11.41%	12.09%	12.87%	13.79%



Closing

- ◆ Questions?
- ◆ Discussion?

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